DOCUMENT RESUME

ED 468 138 HE 035 180

AUTHOR	Hoyt, Jeff E.; Haas, Terry
TITLE	The Economic Impact of Utah Valley State College, 1996-1997.
INSTITUTION	Utah Valley State Coll., Orem.
PUB DATE	1998-06-00
NOTE	21p.; A study conducted by the Department of Institutional Research and Management Studies.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Colleges; *Economic Factors; *Expenditures; Higher Education; *School Community Relationship
IDENTIFIERS	Impact Evaluation; *Utah Valley State College

ABSTRACT

This report estimates the economic impact of Utah Valley State College (UVSC) on Utah County, Utah, in 1996-1997, using the Ryan-New Jersey model, a model that estimates economic impact on the local economy by summing the total expenditures of the college, employees, and students. UVSC is a state college composed of two interdependent divisions, a community college division and an upper division that consists of programs leading to baccalaureate degrees in areas of high community demand and interest. The U.S. Department of Commerce has developed a multiplier to apply to expenditures to estimate the total impact of college, employee, and student expenditures on the local economy. It is estimated that about $112 million of the economy in Utah County during fiscal year 1996-1997 was a result of the presence of UVSC. The expenditures of the College generate business for nearly every type of business enterprise in the County. The College provided jobs for 714 full-time and 1,228 part-time working adults (non-students), and employment for 694 students. Estimates indicate that the state obtains a high return on its investment in UVSC; for every dollar invested by the state in 1996-1997, there was a total return of $3.81 to the community. The economic impacts of some of the College's programs and centers are estimated individually. One appendix contains the economic impact work sheet under the Ryan-New Jersey model. A second appendix contains model survey data, and the third cites one reference. (SLD)

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THE ECONOMIC IMPACT OF UTAH VALLEY STATE COLLEGE 1996-1997

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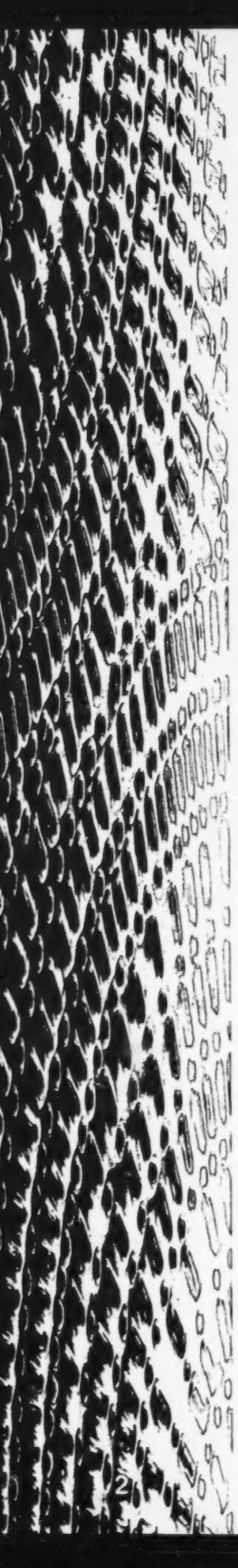
A Study Conducted by
The Department of Institutional Research and Management Studies
June 1998

IE008518

Mission Statemen

Utah Valley State College is a state college comprised of two interdependent divisions. The lower division embraces and preserves the philosophy and mission of a comprehensive community college, while the upper division consists of programs leading to baccalaureate degrees in areas of high community demand and interest.

Utah Valley State College is dedicated to providing a broad range of quality academic, vocational, technical, cultural, and social opportunities designed to encourage students in attaining their goals and realizing their talents and potential, personally and professionally. The College is committed to meeting student and community lower division and upper division needs for occupational training; providing developmental, general, and transfer education; meeting the needs for continuing education for personal enrichment and career enhancement; and providing diverse social, cultural, and international opportunities; and student support services.



Preface

Colleges and universities impact their local communities in many ways. This report is an attempt to quantify this impact in a limited way and in non-technical terms. It begins by describing the Ryan-New Jersey model and the economic impact of the college, and then highlights several centers on campus: The McKay Events Center, Mountainland Applied Technology Center, Utah Small Business Development Center, Utah Manufacturing Extension Partnership, and Volunteer Services. The methodology for the study is described in more detail in the appendices.

Jeff E. Hoyt
Senior Research Analyst

Terry Haas
Director

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Introduction

Utah Valley State College (UVSC) offers over 50 programs leading to diplomas, one-year certificates and Associate degrees. UVSC currently offers Bachelor degree programs in Business Management, Hospitality Management, Technology Management, Computer Science/Information Systems, Elementary Education, and Integrated Studies. During Fall 1997, the college provided instruction to 15,994 students. This represents an enrollment increase of 103 percent since Fall 1990, when the college converted to the semester system.

UVSC sponsors programs that aid small business development. Additional programs assist local industry in adopting new or existing technology.

UVSC also provides public service through its volunteer programs that impact the lives of hundreds of people. The public is enriched through the college's cultural and recreational activities, and performing arts programs.

Local Economic Impact of UVSC

This report estimates the economic impact of UVSC on Utah County using the Ryan-New Jersey model. This model has been used by several other colleges and universities to estimate their economic impact. It has been used by UVSC for its last two economic impact studies.

The Ryan-New Jersey model estimates the total economic impact of the college on the local economy by summing the total expenditures of the college, employees, and students. These expenditures have a multiplier effect because they are re-spent several times in the local economy.

For example, an employee paid at UVSC will spend money for goods and services at local businesses in the county. These businesses pay their employees who also spend the money in the county. Businesses also purchase goods and services from each other--all of which increases the economic activity in the county.

The U.S. Department of Commerce, Bureau of Labor Statistics conducts a series of in-depth studies to develop economic multipliers that quantify the multiplier effect. The present study used the multipliers specifically developed for colleges and universities in Utah County for 1995-- the most recent data available.

The total economic impact is calculated by taking total expenditures in the county and multiplying it by a multiplier as outlined on the following page:

Expenditures in Utah County:

College Expenditures:	$10,975,293
Plus	
Employee Expenditures:	$14, 981,927
Plus	
Student Expenditures:	$35,569,490
Equals	
Total Expenditures:	$61,526,710
Times	
Multiplier:	1.8290
Equals	
Total Economic Impact:	$112,532,353

In other words, about $112 million dollars of the economy in Utah County during fiscal year 1996-1997 was due to the presence of UVSC. The expenditures of the college generate business for construction, apartment owners, hotel managers, food suppliers, automotive dealers, insurance companies, office supply stores, and virtually every type of business enterprise in the county.

Employment Related to UVSC

In addition to increasing the level of business activity, the college provided jobs for 714 full-time and 1,228 part-time working adults (non-students). It also provided work study or employment for 694 students. UVSC jobs create additional employment that benefits other local businesses. A job multiplier was used to estimate the number of jobs (full and part-time) created in the county that were related to the presence of UVSC.

Total Jobs At UVSC: *(Employees residing in Utah County)*	2,257
Times	
Multiplier:	1.4190
Equals	
Total Employment Related to UVSC:	3,203

Return on Taxpayer Investment

Revenues for the college come from several sources including tuition and fees, the federal government, sales and services, auxiliary enterprises, state appropriations, private donations and gifts. During 1996-1997, the state provided about 40 percent of the revenues for operating the college (including state appropriations, state grants and contracts).

The state obtains a high return on their investment in UVSC. The ratio of the college's total economic impact in Utah County to state funds is as follows:

$112,532,353 / $29,503,037 = $3.81

In other words, for every dollar invested by the state during 1996-1997, there was a total return of $3.81 to the community.

Other Benefits

Students benefit from higher education because it increases their potential earnings (see Chart 1). Employees with a bachelor's degree have almost double the income of those who only have a high school diploma. More highly educated workers tend to enter higher paid professions as a general rule. A pool of well trained workers also attracts business and industry into the local economy.

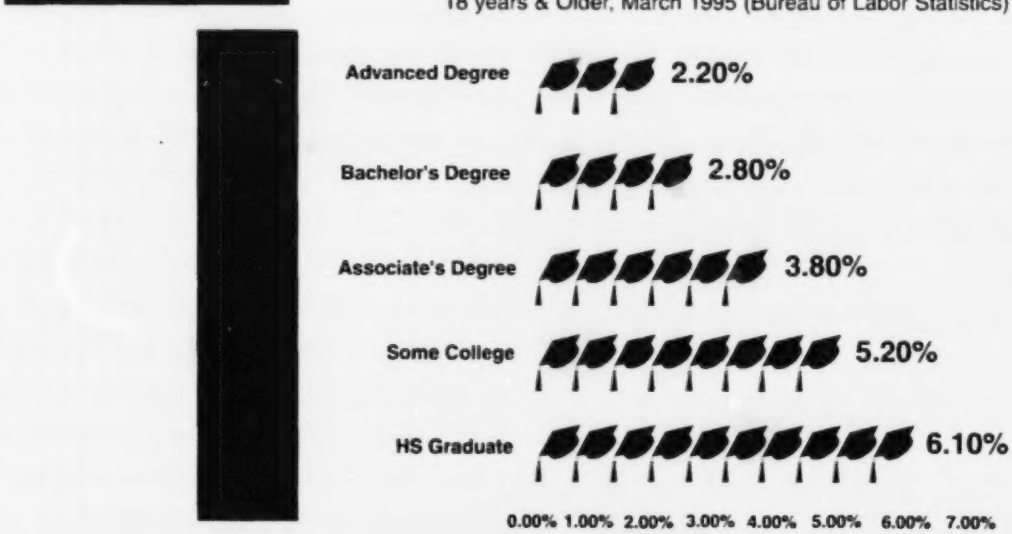
Another benefit of higher education is lower unemployment (see Chart 2). During layoffs, employers may try to retain workers with higher education levels over those with limited education. Educated workers also have an advantage when applying for jobs compared to those with only a high school diploma.

UVSC also helps promote business and industry by sponsoring the regional Utah Small Business Development Center, Mountainland Applied Technology Center, and the Utah Manufacturing Extension Partnership. In addition, the McKay Events Center generates a substantial amount of revenue and enhances the community by sponsoring cultural and recreational events, and performing arts programs. Each year, Volunteer Services coordinates the involvement of several hundred students, faculty, and staff in community service.

Chart 1: Average Annual Income By Educational Attainment
18 years & Older, March 1995 (Bureau of Labor Statistics)

Professional Degree $$$$$$$$$$$$ $82,749
Doctoral Degree $$$$$$$$$ $67,685
Master's Degree $$$$$$$ $46,332
Bachelor's Degree $$$$$ $37,224
Associate's Degree $$$$ $26,363
Some College $$$ $20,728
HS Graduate $$$ $20,248
$0 $20,000 $40,000 $60,000 $80,000 $100,000

Chart 2: Unemployment Rates By Educational Attainment
18 years & Older, March 1995 (Bureau of Labor Statistics)



McKay Events Center
Location: EC-012
Phone: 222-8767
Brent Roberts, Director

The McKay events center sponsors numerous events that bring thousands of visitors into the county, which generates several million dollars in revenues for the local area. In addition, the programs provide cultural enrichment for the surrounding communities.

State appropriations account for about $400,000 of the budget for the events center. Most of the funds to run and upgrade the facility are generated through revenues from events. Total revenues for fiscal year 1996-1997 were $2.2 million with about $1 million being paid to promoters and performers for settlement expenses, leaving about 1.2 million in gross profits most of which paid for the cost of hosting events. Any additional revenues were used to upgrade the facility so that more diverse programs and shows could be offered at the center.

During 1996-1997, the center sponsored circus shows, ice capades, and other family shows that attracted 29,990 attendees. Another 28,354 people purchased tickets to six music concerts. The center was used for 38 catered events with 11,927 attendees for businesses, non-profit organizations, and other organizations.

There were 45,384 attendees at UVSC sporting events and camps, and 30,509 attendees at high school sporting events. Another 25,811 people attended trade shows, 18,450 attended conference events, 25,310 participated in graduation ceremonies including graduation for three high schools, and 24,206 attended other UVSC activities such as sports, dance, and theater practices, physical education classes, intramural sports, and culinary arts programs.

Overall, there were 102 events held over 170 event days with 297,539 in attendance, which is above the national average for similar facilities. When including all activities at the center, there were approximately 322,245 attendees who used the facility during 1996-1997.

Several million dollars are brought into the local area because of the existence of the events center, not only in revenues from ticket sales, but in generating business for hotels, local restaurants, stores, and transportation services--all of which benefits the community.

Northwest view, McKay Events Center

Mountainland Applied Technology Center (MATC)

Location: West Campus, 987 South Geneva Rd, Orem
Phone: 764-7528
Royanne Boyer, Dean Executive Director

The Mountainland Applied Technology Center (MATC) provides a setting in which the community and education work side-by side. Because learning is central to economic growth and prosperity, the MATC provides for and responds to the training needs of both citizens and businesses. During fiscal year 1996-1997, the center provided instruction/training to over 15,000 people and over 1,000 companies. More than a half million dollars was spent to benefit local businesses and students in training programs such as, accounting, insurance billing, medical terminology, Microsoft and Novell certified network engineering, truck driving, vehicle safety and emissions, customized training for businesses, etc.

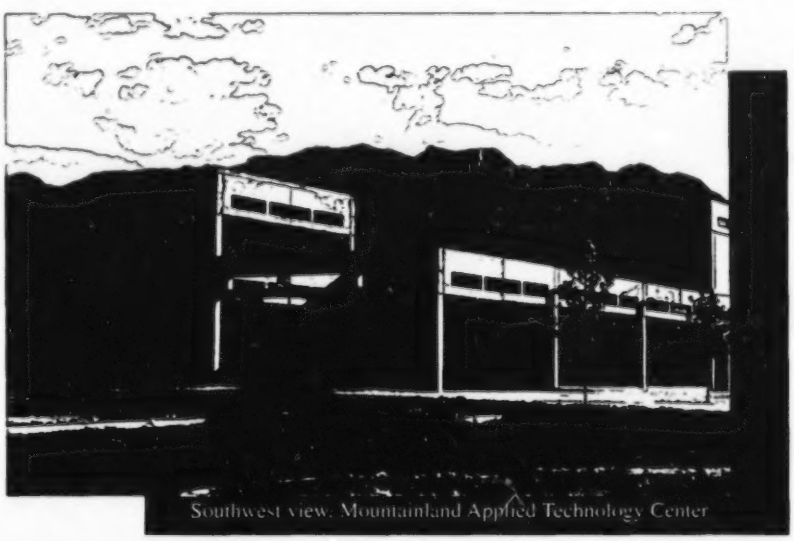
Customized training has been provided to major employers such as: Geneva Steel, US Synthetic, Corel, Wal-Mart Distribution, Skywest Airlines, and many others.

Carl E. Ramnitz, Vice President of Human Resources at Geneva Steel describes the importance of training at the MATC: "The technological training of our workers through the MATC has been an important part of our overall modernization effort, which is absolutely essential to Geneva's success now and in the foreseeable future."

Instruction at the MATC is offered through a variety of means, including certificate programs, individual specialized courses, seminars and programs as well as short-term intensive, competency-based training, computer-based training, distance learning courses, demonstrations and on-site consultations.

Learning is measured against national and international standards and is tied to state-of the-art knowledge, technologies and applications. Learning interaction is scheduled to accommodate the needs of students including days, nights, and weekends. Modular instruction also enhances the ability of students to move at their own pace.

The MATC is a community resource for citizens and businesses and offers a wide range of services that can individually or collectively help people become more productive, thereby contributing to the economic growth of their communities.



Southwest view: Mountainland Applied Technology Center

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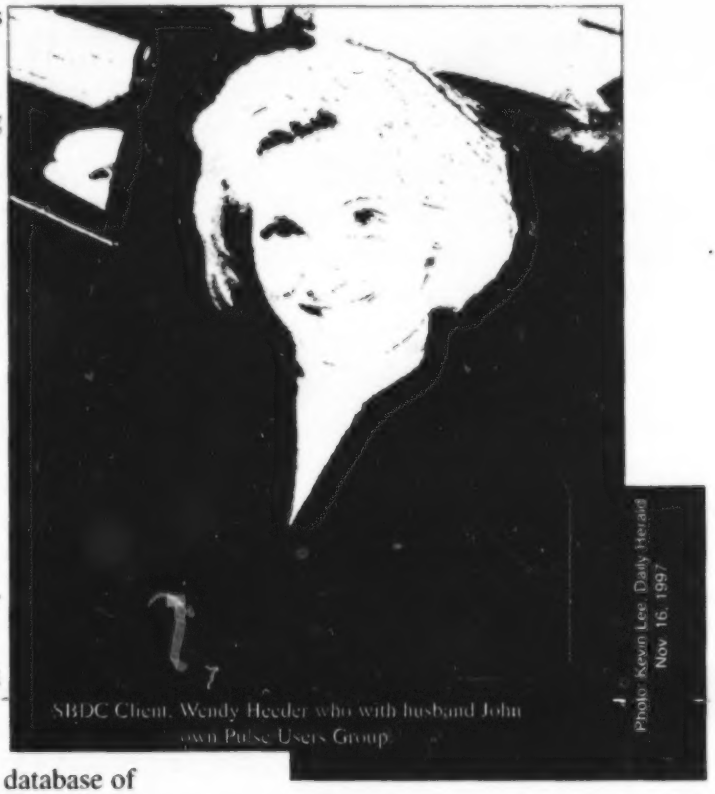
Utah Small Business Development Center (SBDC)
Location: BU-128
Phone: 222-8230
Charles Cozzens, Director

Small businesses represent more than 90 percent of business enterprises in the state. The regional center located at Utah Valley State College provides free consultation services for small business, or those wishing to start a new business in Utah, Wasatch, and Summit Counties. Experienced staff analyze the strengths and weaknesses of local business, help them evaluate their financial health, financing requirements, company policies and procedures, and strategic planning.

The center provides information on marketing questions and access to resource networks. During 1996-1997, the center conducted small business counseling / consulting with over 260 separate clients. Over 30 separate training events were hosted, or co-sponsored with over 400 attendees. The staff tested the use of the NxLevel Entrepreneurial Training Program as a possible future curriculum addition to courses in the School of Business. The center facilitated the procurement of over $150 million of government-related contracts by maintaining a database of information and helping small businesses in the area access the information.

Typical comments about the center by those receiving assistance are exemplified by the following quote from Wendy Heeder in the Daily Herald. They "took time with us, found out our ideas and needs, and helped us with business plans and financing." [They have] "been invaluable and we still call...it's kind of like having a personal consultant. I believe we would not be where we are today without [them]."



SBDC Client, Wendy Heeder who with husband John own Pulse Users Group

Photo: Kevin Lee, Daily Herald Nov 16, 1997

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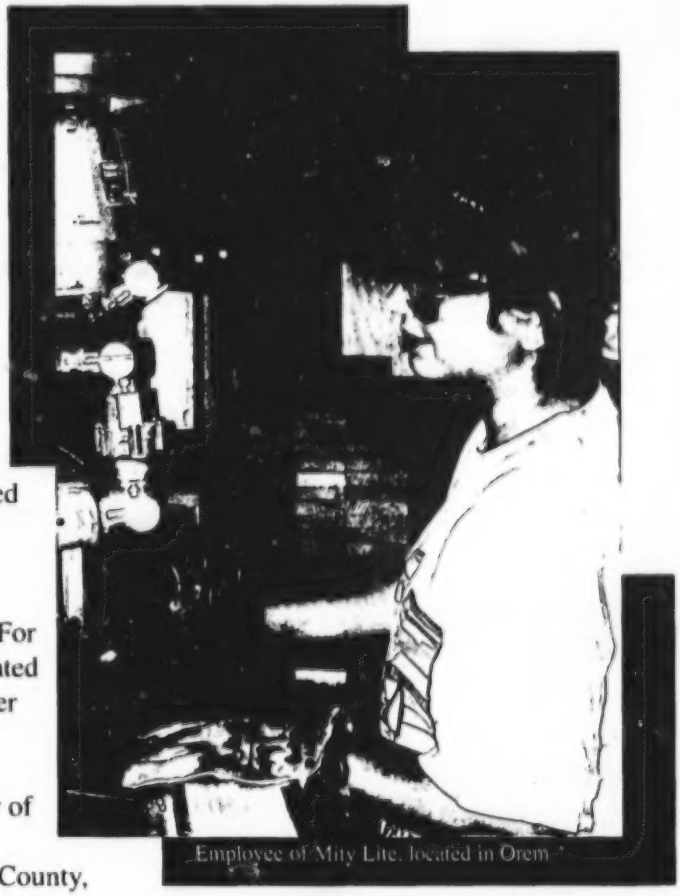
Utah Manufacturing Extension Partnership (UMEP)
Location: EN-115
Phone: 222-8637
David K. Sorensen, Executive Director

The Utah Manufacturing Extension Partnership (UMEP) is also located on the UVSC campus, and helps small manufacturers modernize by adopting new technology, production techniques, and business practices.

During 1996-1997, the center served 584 manufacturers in Utah. The UMEP received 50 percent of its 2.4 million budget from state and federal sources. UMEP Staff assisted manufacturers in using CAD/CAM, plant simulation, project management, 3-D modeling, pre-construction evaluation, lighting audit, energy consolidation, environmental project regulation, and helped them perform Department of Environment Quality Audits. Part of their services include assistance with resources for environmental compliance. The Census Bureau audits the quality of the work to verify impact and whether the expected benefits are realized. The center also managed an information technology network for manufacturers. They provided a scholarship for students, and internships or part-time employment for students interested in manufacturing.

Manufacturing provides added benefit to the economic development of the community. For each 100 manufacturing jobs created in the state, 422 more jobs in other sectors are created (Expansion Management, Nov-Dec, 1993).

Mity-Lite, a manufacturer of lightweight folding tables and stackable chairs, located in Utah County, requested assistance in layout design to improve their process efficiency. Through partnership with the UMEP they were introduced to Process Model, a manufacturing modeler software. This process enabled Mity-Lite to simulate several different layouts and select the most effective. According to Dan Garvey, Senior Manufacturing Engineer at Mity-Lite, "Not only were we introduced to new software capabilities, but we also learned the monumental impact one department has upon another. The net effect of the changes produced a more efficient manufacturing process."



Employee of Mity Lite, located in Orem

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Volunteer Services
Location: LC-101
Phone: 222-8796
Michael Jensen, Coordinator

UVSC is committed to serving the public, and Volunteer Services promotes this goal by coordinating volunteer programs for students and staff. Volunteer programs give students the opportunity to learn while serving others in the community.

During fiscal year 1997, there were more than 650 students, faculty, and staff who visited the center and obtained information and referrals to many volunteer service programs in the community. The center also presented information to over 550 students in classrooms on campus.

There were more than 1,050 faculty and student volunteers who donated over 1,352 hours providing quilts, food, clothing, and gifts for the homeless and poor. These programs included the Quilting For Shelters Program, Food Drive, Coat/Sweater Drive and Sock Hop, Sub-for-Santa Program, and the Holiday Charity Ball.

Another 351 faculty and staff gave blood in the annual blood drive. This provided needed blood for local area hospitals and medical facilities.

There were 90 volunteers who donated over 900 hours of service, tutoring students at Lakeridge Junior High School. Randy Honaker, Lakeridge Jr. High Principal, gives the following description of the program, "It's been very successful. The focus is tutoring students who may be having difficulties in any number of ways. We are thrilled that it's working!"

There were 16 volunteers who gave 424 hours to the Bureau of Land Management, 30 volunteers donating 25 or more hours in the Valentines for Veterans program, 16 students in the CASS student group giving about 2,400 hours of volunteer service in various programs.

Other programs included services for the Alpine Valley Care Center, Family Hospice Care, Provo School District, and Utah Legal Services. Participation in United Way Programs included services to public libraries, Head Start, crisis centers, American Red Cross, American Cancer Society, Children's Justice Center, shelters, services for the disabled, nursing services, and many more.

UVSC does not track all the donated hours. There are many more students, faculty, and staff serving the community through these programs. Faculty and staff are given one paid day of leave each year to volunteer for community service programs. UVSC has a strong commitment to service, and helping others in the community.

ASAY Creek Project: UVSC students replacing culverts for the Bureau of Land Management

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Appendix A:
Ryan-New Jersey Model
Economic Impact Work Sheet

Appendix A: Ryan-New Jersey Model Economic Impact Work Sheet

Data Element		Formula	Result
1.	College Expenditures		$38,396,082
2.	Total Student Activity Expenditures		$801,393
3.	Percentage of College Expenditures		
	a. in sponsor area:		28%
	b. in state:		79%
	c. out-of-state:		21%
4.	Number of College Employees		
	a. full-time:		714
	b. part-time:		1,228
	c. TOTAL:	L4a + L4b (i.e. 714+1,228)	1,942
	d. FTE for above:		1,119
5.	College Employees Who Live in sponsoring county (ies)		
	a. full-time:		593
	b. part-time:		1,019
	c. TOTAL:	L5a + L5b	1,612
	d. FTE for above:	[(L4d-L4a)/L4b*L5b]+L5a	929
	in State		
	e. full-time:		714
	f. part-time:		1,228
	g. TOTAL:	L5e + L5f	1,942
	h. FTE for above	(L4d-L4a)/L4b*L5f+L5e	1,119
6.	Total Employee Disposable Income Available:		$23,807,931
7.	Number of Students		
	a. Full-time:		6,807
	b. Part Time:		5,554
	c. TOTAL:	L7a+L7b	12,361
	d. Students Employed at UVSC		694
	e. Percent of UVSC Students in Utah County		93%

Data Element		Formula	Result
8.	Average Annual College-Related Expenditures by Full-time Students:		$4,230
9.	Average Annual College-Related Expenditures by Part-time Students:		$1,220
10.	Revenue From Students:		$20,815,264
11.	Revenue From Local Governments:		0
12.	State Aid:		$29,503,037
13.	Revenue From Other Sources Within State:		$14,694,801
14.	Revenue From Out-of-state Sources:		$183,843
15.	Estimate of Percent of Employee Expenditures in county:		65%
16.	Total Number of Out-of-county		
	a. Full-time employees:	L4a-L5a	121
	b. Part-time employees:	L4b-L5b	209
17.	Total Number of Out-of-state		
	a. Full-time employees:		0
	b. Part-time employees:		0
18.	Annual Expenditures in Service Area by Employees Residing Out of Service Area		
	a. Full-time employee expenditures:		$1,000
	b. Part-time employee expenditures:		$500
19.	Percentage Who Rent in County:		37%
20.	Mean Monthly Rent in County:		$725
21.	Utah County Multiplier:		1.829
22.	Utah State Multiplier:		1.7626
23.	Job Multiplier For Utah County:		1.419
24.	Countywide data for individual college		
25.	Total Student Activity Expenditures in County:	L3a*L2	$224,390

Data Element		Formula	Result
26.	College Expenditures in County:	L3a*L1	$10,750,903
27.	Total In-County Expenditures by College:	L25+L26	$10,975,293
28.	Disposable Income of In-County Employees Spent In County On Non-housing items:	L6*(L5d/L4d)*L15	$12,847,560
29.	Expenditures of Out-of-county Employees in County on Non-housing Items:		
	a. Full-time	L16a*L18a	$121,000
	b. Part-time	L16b*L18b	$104,500
30.	Rental Expenditures by Full-time College Staff Living in County:	L5a*L19*L20*12	$1,908,867
31.	Total Employee Expenditures:	L28+L29a+L29b+L30	$14,981,927
32.	Total Expenditures by Full-time Students:	L7a*L8	$28,793,610
33.	Total Expenditures by Part-time Students:	L7b*L9	$6,775,880
34.	Total Expenditures by Students:	L32 + L33	$35,569,490
35.	Total Direct Economic Impact of the College on the County	L27+L31+L34	$61,526,710
36.	Utah County Multiplier Effect:	L21	1.829
37.	Total Estimated Economic Impact:	L35*L36	$112,532,353
38.	Total Jobs Related to College in County:	(L5c+L7d*7e)*L23	3,203
39.	Indirect Jobs Related to College in County:	L38-L5c-(L7d*7e)	946
40.	Ratio of Sponsor Contribution to Total Economic Impact:	L37/L12	$3.81

Appendix B:
Ryan-New Jersey Model
Survey Data

Appendix B: Ryan-New Jersey Model Survey Data
(Utah County)

Category	Amount		Source & Documentation
1. College Expenditures	Total Expenditures	$71,796,865	Total Expenditures: (Financial Report 1996-97)
	Internal Transfers	- 0	Internal Transfers were not included in Total Expenditures
	Salaries	-$32,599,390	Salaries--Includes Benefits: (Director of Institutional Research, Terry Haas, 3/18/98)
	Taxes	- 0	The college pays no taxes. Taxes paid by employees are included in Salaries.
	Student Activity Expenditures	-$801,393	
	College Expenditures	$38,396,082	
2. Student Activity Expenditures	$801,393		Student Activity Expenditures: (Senior Accountant 4/8/98)
3. Location of College Expenditures	In County	28%	Purchasing:(Computer Services Job 614 D2450A, 03/19/98)
	In State	79%	DFCM: (Senior Accountant, Wendy Smith, 4/8/98)
	Out-of-State	21%	Credit Cards--Supplier Detail: (Director of Accounting, Mike Jones, 3/30/98)
4. Total College Employees	Full-time Employees	714	Total Salaried Employees--Head Count: (Karla Holm, Director of Human Resources, 12/15/96)
	Part-time Employees	1,228	These numbers do not include any students.
	Total	1,942	
	FTE (part-time = .33)	1,119	
5. Total College Employees In County	Full-Time Employee Headcount In County	.83 * 714 =593	Focus Report:(Director of Institutional Research, Terry Haas, 3/18/98) Address information was used to calculate the percentage of employees in the county. Full-time and part-time employees were combined in the analysis. Employees with addresses out of state or with unknown addresses were not included in the calculation for percent living in county. Addresses for student employees were not included in the calculation.
	Part-Time Employee Headcount In County	.83 * 1,228 = 1,019	
	Total 1,612		
	FTE (part-time = .33) = 929		
6. Employee's Total Disposable Income	Total Income - Taxes		Focus Report:(Director of Institutional Research, Terry Haas, 3/18/98) Includes total money paid to all college employees, including benefits, but excluding all taxes (i.e. city, state, federal, social security) and all mandatory retirement deductions. Student disposable income ($1,976,307) was subtracted from total disposable income ($25,784,238) to calculate disposable income for college employees.
	$32,599,390 - $6,815,152 = $25,784,238		
	$2,223,282 - $246,975=$1,976,307		
	Difference: $23,807,931		
7. Student Information	Full-time Students 6,807		1996-1997 Fact Book Part-time students do not include concurrent enrollment students taking courses at the high schools. Total Salaried Employees--Head Count: (Karla Holm, Director of Human Resources, 12/15/96) Focus Report:(Director of Institutional Research, Terry Haas, 3/18/98) Address information from the Human Resources database was used to calculate the percentage of students living in the county.
	Part-time Students 5,554		
	Total 12,361		
	Students Employed at UVSC 694		
	Percent Employed Living in UTC 93%		

Appendix B: Ryan-New Jersey Model Survey Data
(Utah County)

Category	Amount	Source & Documentation
8. Expenditures Per Full-time Student	Tuition & Fees Room & Board $1,800 Books & Supplies $1,000 Transportation $720 Personal Expenses $710 Total $4,230	Financial Aid Schedule (1996-1997 Academic Year) Estimated for a full-time commuter student (living at home) who attends Fall and Spring semesters. The Ryan-New Jersey Model excludes tuition and fees.
9. Expenditures Per Part-Time Student	Tuition & Fees Room & Board Books & Supplies $500 Transportation $720 Personal Expenses Total $1,220	Financial Aid Schedule (1996-1997 Academic Year) Estimated for a commuter student (living at home) less than part time who attends Fall and Spring semester. The Ryan-New Jersey Model excludes tuition and fees, room and board, and personal expenditures for these students.
10. Revenue From Students	Tuition and Fees $20,815,264	IPEDS FY 1997 Finance Report
11. Revenue From Local Government	0	IPEDS FY 1997 Finance Report
12. State Appropriations & Contracts	$25,581,000 + $3,922,037 = $29,503,037	IPEDS FY 1997 Finance Report--State Appropriations & Contracts
13. Other Sources In State	$14,520,676 + $174,125=$14,694,801	IPEDS FY 1997 Finance Report (Sandy Cappell, 4/15/98, Accountant Grants & Contracts) Revenues from sales and services, auxiliary, and other sources are generated in-state according to the senior accountant. The amount of private, gifts, grants, and contracts from in the state was given by Sandy Cappell.
14. Other Sources Out-of-State	$183,843	(Sandy Cappell, 4/15/98, Accountant Grants & Contracts)
15. Percent of Employee Disposable Income Spent In County	65%	Total Retail Sales divided by Effective Buying Income of Households. Sales and Marketing Management 1997.
16. Expenditures for Out-of County Employees	Full-Time $1,000 Part-Time $500	Amounts provided by the Ryan-New Jersey Model.
17. Percentage of Full-Time Employees Who Rent	Utah County Renter Occupied Units (26,178) divided by Total Units (70,168) 37%	Statistical Abstract of Utah 1996. This is based on 1990 census data, which is the most recent data available.
18. Average Monthly Rent In County	2 Bedroom Apartment w/o utilities $595 3 Bedroom Apartment w/o utilities $855 Average for 2 & 3 Bedroom $725	(Gene Carley, Director, Utah County Housing Authority) Fair Market Rent Studies using the 50th percentile and subtracting out $78 for utilities. The surveys of residents and apartment owners were completed in early 1997.
19. County Multiplier Effect	1.829	U.S. Department of Commerce, 1995 for Utah County--colleges and universities. This is the most recent multiplier available.
20. Job Multiplier	1.419	U.S. Department of Commerce, 1995.

Appendix C:
References

Eastern Association of College and University Business Officers. The Economic Impact of Colleges On Their Communities and States. Monroe Community College, 1989.